

# International Conference and Training Seminar

## 'Business Planning of Energy Efficiency and Renewable Energy Projects'

Skopje, 29-30 June 2011

### Information Report



## Introduction

The International Conference and Training Seminar on Business Planning of Energy Efficiency (EE) and Renewable Energy (RE) Projects in the countries of South-Eastern Europe (SEE) was held on 29-30 June in Skopje, the former Yugoslav Republic of Macedonia. The event was organized jointly by



the United Nations Economic Commission for Europe (UNECE), the Norwegian Association of Energy Suppliers and Users (Norsk Energi) and their partners in the former Yugoslav Republic of Macedonia - Energy Agency of the Republic of Macedonia and Centre for Climate Change.

The event was organized for participants from Albania, Bosnia and Herzegovina, Bulgaria, Croatia, Serbia and the former Yugoslav Republic of Macedonia.

The UNECE is implementing the Financing Energy Efficiency and Renewable Energy Investments for Climate Change Mitigation (FEEI) Project in 12 countries of South-Eastern and Eastern Europe and Central Asia<sup>1</sup>. Development of a pipeline of energy efficiency and renewable energy projects that are commercially viable and have a potential to be financed is among the goals of the FEEI Project. Another objective of the Project is establishing a public-private partnership investment fund, which will provide market-based equity and mezzanine financing for such projects. To achieve these objectives, UNECE has begun a training programme for project developers and owners from the participating countries in business planning tools and methods.

Norsk Energi in cooperation with Centre for Climate Change (CCC) carries out a programme “Cleaner and more cost effective industry in Macedonia” (CCEI), financed by grant from the Norwegian Ministry of Foreign Affairs. The programme includes training and technical assistance in energy efficiency project development and environmental management, as well as student exchange for practical training in tasks related to energy and environment. For energy efficiency projects qualifying for participation, the programme co-finances development of project documentations. The documentation will be prepared by project teams consisting of company representatives, local junior consultants involved in building local capacity for project development and senior consultants from the former Yugoslav Republic of Macedonia Macedonia and Norway. The CCEI programme can co-finance development of documentation for obtaining financing and provide assistance in obtaining financing.

The idea of conducting a joint UNECE/Norsk Energi event provided an opportunity for synergy of existing experiences and knowledge from both projects focused on the preparation of bankable EE and RE project proposals.

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<sup>1</sup> Albania, Belarus, Bosnia and Herzegovina, Bulgaria, Croatia, the former Yugoslav Republic of Macedonia, Kazakhstan, Republic of Moldova, Romania, Russian Federation, Serbia, and Ukraine

## Background

There is a significant potential for utilization of renewable energy sources and promoting energy efficiency measures in the countries of SEE. This is one of the reasons why these practices should be encouraged and promoted as a way towards reducing CO<sub>2</sub> emissions and improving environmental performance. Despite the potential, renewable energy and energy efficiency has not been exploited to the extent required to realize their benefits. Moreover, energy costs are increasing and environmental aspects are also becoming a growing consideration throughout SEE. Interest is therefore increasing in developing such projects and investing in them. Financing institutions present in the region are considering financing of RE and EE projects, and various types of financing are becoming available for these kinds of projects which overall proves rising awareness in their potential profitability.

Preparation of project proposals in accordance with the requirements of the financing institutions seems to be a complex issue for the project developers. However, improving the institutional conditions and simplifying the procedures are encouraging project developers to develop RE and EE projects. The difficulty in receiving loans with low interest rates and under favorable conditions still remains. There is additionally a need for capacity building activities in order to ensure the development of bankable EE and RE project proposals.

Energy efficiency and renewable energy projects lead to significant reductions of greenhouse gases (GHG) emissions. Due to improved institutional conditions, such projects often provide reasonable return on investments, but high upfront capital costs often represent a barrier to these projects. For the project developers, implementation of the projects often represents a possibility of obtaining soft loans from international organizations and additional carbon revenue, thus improving project's economic feasibility.

However, the solutions are often complex and the substantial investments should be carefully planned taking into account technical, economic and institutional aspects. Banks and other financial institutions have been selective in their investment strategies due to lack of the required quality assurance of their investments. Given these challenges, a good quality business plan is one of the most critical elements for obtaining access to financing. International conference and training seminar organized in Skopje was aiming at increasing capacities of project developers and owners to develop high quality business plans and make their projects bankable.



### **More than 100 participants from various economic sectors**

Over 100 participants from Croatia, Bosnia and Herzegovina, Albania, Serbia, Bulgaria and the former Yugoslav Republic of Macedonia participated in the training seminar and international conference. Participants represented project developers and owners, national authorities, municipalities, private companies, international and local financial institutions, and media.

## **Norwegian assistance on EE and RES in the countries of SEE**

The Norwegian Government has been funding projects related to climate change mitigation, energy and environmental protection in the former Yugoslav Republic of Macedonia as well as many other South-East European countries for many years. Mr. Herman Baskar, Councilor at the Royal Norwegian Embassy in the former Yugoslav Republic of Macedonia emphasized that Norway is active in promoting

and supporting developing countries and economies in transition in activities directly related to reducing environmental and climate change impacts .

The former Yugoslav Republic of Macedonia as an EU candidate is required to meet EU requirements for EE and for the share of renewable energy in the near future. Given this, it is therefore timely that the Government of the country has started focusing on issues related to energy efficiency and renewable energy production. Energy efficiency is a priority for the area, not only because industry is a driving force, but also because consumers are becoming more conscious of environmental impacts from production and consumption of energy.

Norsk Energi has been working in the former Yugoslav Republic of Macedonia for more than 4 years on the projects related to energy, environment and climate change. As part of their activities, there is a focus on providing training to young professionals in order to build local capacity and to improve local driving force for development of this type of projects. Norsk Energi is also working on projects in other countries of SEE such as Serbia, Bosnia and Herzegovina, and Croatia.

### **Barriers to implementing EE and RE projects**

Oleg Dziubinski, FEEI Project Manager at the UNECE, Sustainable Energy Division provided information on barriers for promoting and developing EE and RE projects. He emphasized that regulatory framework in the countries of the SEE region is complex and often cumbersome. The hurdles include instability and inconsistency of policies and legislation, as well as lack of secondary legislation, operational instructions, tools and procedures. Apart from legislative barriers, there are also economic and financial barriers, low level of awareness, human capacity and professional skills. In order to improve the current situation, further development of policy framework is needed, as well as effective monitoring of policy implementation and establishment and strengthening of institutional structures. Reforms in energy tariffs and carefully developed financial incentives for EE and RE projects are needed. These are main steps that can lead to overcoming barriers and increased implementation of EE and RE projects.

### **Project proposals developed within the framework of CCEI and FEEI Projects**

Work conducted under these two Projects has resulted in the development of a number of project proposals related to reducing environmental impact, increasing energy efficiency and utilization of renewable energy.

One of the main aims of the conference was to give project developers and owners an opportunity to present these projects in front of potential financiers. During the conference, project developers had the opportunity to present their projects in front of the distinguished participants, including representatives from financial institutions. The conference could be viewed as a place where both sides had direct access to each other and establish initial links for cooperation on financing and implementing these projects.

A number of project proposals developed under CCEI and FEEI Projects were presented at the conference.



1. Modernization of Cooling Towers In TPP Bitola, JSC ELEM

Aim of this project is increasing efficiency of the thermal power plant with modernization of the cooling towers and investigating the project's eligibility to qualify for carbon financing as a Clean Development Mechanism (CDM) project.

2. Bitola District Heating with Thermal Energy From TPP Bitola, JSC ELEM

This project is analyzing possibilities of utilization of thermal energy from TPP Bitola for district heating of Bitola and greenhouses in the area of Novaci and Mogila.

3. Replacement of fossil fuels with vine prunings in Kavadarci municipality, Pilot project "Dobri Daskalov" high school, Municipality of Kavadarci



This is one of smaller projects developed under CCEI programme Its main objective is introducing new practice - utilization of biomass (wine grape residues) for heating purposes in a public building in one of the municipalities in the former Yugoslav Republic of Macedonia where potential for utilization of this kind of biomass is the largest.

4. Investments in Energy Efficiency and Renewable Energy – MAVIS Tekoma, Stip

Mavis Tekoma is a company from Stip, which has renovated the roof and installed solar photovoltaic (PV) panels with capacity of 250 kW. Solar PV panels are installed on 3 roof surfaces. They have generated 148 MW/h of electricity and have reduced 108 t CO<sub>2</sub> up to now.

5. Municipal Energy Efficiency Programme 2010–2014, Designed and Implemented measures and results, Municipality Kisela Voda

Municipality of Kisela Voda is a Municipality in the City of Skopje with large potential for energy saving and implementing energy efficiency measures. Within this programme it intends to reduce energy consumption, reduce emissions of greenhouse gases, improve services for street lighting, reduce energy costs in the municipal budget around 45-50%, renovate energy systems and buildings and improve comfort in municipal buildings

6. Eco-innovative factory, Konstruktor

This project is in a quite early stage of development. The project's concept is construction of a completely automatic facility for production of Low-E glass where the product will be high quality processed glass for interior design. This glass will be produced from recycled glass and will be the first of its kind produced this way in the former Yugoslav Republic of Macedonia.

7. "Public flat roof market", Regional Energy Agency Kvarner Ltd

The project "Public flat roof market" is planning to install a solar power plant capacity of up to 2 MW, which represents annual production of 2,200 MWh of electricity, enough for the entire electricity needs of

500 households, while simultaneously saving 1,100 t CO<sub>2</sub> emissions. The project is intended to set up photovoltaic installations on the roofs, which are owned by Primorje and Gorski Kotar county or public facilities.

The table below shows estimated CO<sub>2</sub> reductions that will be achieved with implementation of each project and investments that are needed for project implementation.

Name of the project and project owner	CO <sub>2</sub> reduction	Investment cost	Name of the project and project owner	CO <sub>2</sub> reduction	Investment cost
Replacement of fossil fuels with vine prunings in Kavadarci municipality Pilot project "Dobri Daskalov" high school, Municipality of Kavadarci	35 tCO <sub>2</sub> /yr	100,000 EUR	Investments in Energy Efficiency and Renewable Energy – MAVIS Tekoma, Stip	108 tCO <sub>2</sub>	N/A
Bitola District Heating with Thermal Energy From TPP Bitola, JSC ELEM	5,400 tCO <sub>2</sub> /yr	40,000,000EUR	Municipal Energy Efficiency Programme 2010–2014, Designed and Implemented measures and results, Municipality Kisela Voda	2,422 tCO <sub>2</sub> /yr	87,292,187 EUR
Modernisation of Cooling Towers In TPP Bitola, JSC ELEM	34,600 tCO <sub>2</sub> /yr	10,630,000 EUR	Eco-innovative factory, Konstruktor	638 tCO <sub>2</sub> /yr	4,680,000 EUR
			"Public flat roof market", Regional Energy Agency Kvarner ltd	1,100 tCO <sub>2</sub>	478,960 EUR

### Why financial institutions are considering EE and RE project financing

According to financial institutions there is a huge potential in developing business projects related to EE and RE and financial institutions are becoming more open to financing such projects. There has also been some simplification of procedures and conditions for issuing loans and providing other types of financing to these types of projects. Financial results of some implemented EE and RE projects are very good and this encourages financial institutions to consider favorably financing for implementation of similar projects. In addition, increasing energy prices make RE and EE projects look more attractive from the perspective of financing institutions.

## Training seminar for CCEI and FEEI projects participants

The first day of the conference was dedicated to the training seminar for project developers and other stakeholders of the CCEI and FEEI projects. More than 30 project developers and owners from the former Yugoslav Republic of Macedonia, Albania, Bosnia and Herzegovina, Bulgaria, Croatia, and Serbia attended the training in order to increase their knowledge and skills in successful project development.



Ann Iren Glimsdal and Claire Jenkins from Norsk Energi provided information on the importance of energy management for companies, planning of RE projects, identification of EE projects and quantification of savings to be achieved by their implementation, and preparing project documentation for applying to potential sources of financing.



Deltcho Vitchev from Renaissance Finance International made presentation on business planning, which included financial plan and projections, financial risks and their evaluation, financial schemes and sources. He provided practical advice on the approaches to financing sources and explained what are the basic requirements for the project to be considered bankable. He also held individual consultations on preparation of project proposals for interested participants.

After the projects are developed, financed and implemented of, it is important that actual energy savings are measured in order to verify the initial assumptions on energy savings potential. This procedure is particularly important for the Energy Service Companies (ESCOs) where investors are specifically interested in the project performance. One of the mechanisms for this purpose is International Performance Measurement and Verification Protocol (IPMVP) which provides a reliable mechanism for Measurement and Verification (M&V).

Hrvoje Glamuzina from HEP ESCO, Croatia representing the Efficiency Valuation Organization (EVO) gave an overview of the IPMVP and its value for both project owners and financing organizations. Application of the IPMVP principles allows flexibility in creating M&V Plans, while adhering to the principles of accuracy, completeness, conservativeness, consistency, relevance and transparency.



## Available financing for EE and RE projects in the former Yugoslav Republic of Macedonia

Representatives of financial institutions active in the former Yugoslav Republic of Macedonia and the region of South-Eastern Europe Provided information on various financing schemes and technical assistance programmes available. The European Bank for Reconstruction and Development (EBRD), the World Bank, International Finance Corporation (IFC), Macedonian Bank for Development Promotion, Tutunska Banka, and IK Banka - Green for Growth Fund used this opportunity to explain their conditions and eligibility criteria. For investors and project developers, these presentations gave an overview of the existing potential for financing EE and RE projects.

In addition to existing credit lines, participants received information about the World Bank/GEF Sustainable Energy Project, which is providing assistance and support to private and municipal sector. IFC is also active in promoting RE projects in SEE countries and providing assistance to financial institutions, small hydropower plants (SHPP) sponsors, supporting development and financing of SHPP and facilitating RE, and in particular SHPP market formation in Albania, Bosnia and Herzegovina, and the former Yugoslav Republic of Macedonia.

### **Conclusions and recommendations**

Participants from all SEE countries expressed their opinion that the Conference and Seminar were very valuable for them. They emphasized that more work on developing and promoting energy efficiency and renewable energy in the countries of South-Eastern Europe is needed. Organization of similar events and targeted assistance to project developers and owners is necessary and would assist in developing, financing and implementation of more energy efficiency and renewable energy projects.

Bringing together project owners and developers, financing and government officials proved to be very useful. It provided opportunity for linking projects with potential financing.

For project developers, participation in the training seminar was a chance to improve their skills in developing project proposals. They had a chance to learn about international practices for market-standard project documentation and to present their project proposals developed in the framework of the CCEI and FEEI projects.

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